

Appl. No. 10/022,224
Amendment dated March 17, 2006
Reply to Office Action of November 17, 2005

LISTING OF CLAIMS:

The present listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A semiconductor device, comprising:

a circuit substrate;

a conductive substrate;

an insulation film disposed on said conductive substrate;

a semiconductor substrate including

a movable portion that may be vibrated in a first direction;

an input electrode disposed on said insulation film so as to face said movable portion through an open space, receiving periodic signal from said circuit substrate, and causing said movable portion to vibrate in said first direction, a first stray capacitor of a first capacitance being induced in said insulating film between said input electrode and said conductive substrate;

an output electrode disposed on said insulation film so as to face said movable portion through an open space, and outputting a vibration signal indicating vibration of said movable portion in said first direction, a second stray capacitor of a second capacitance being induced in said insulating film between said output electrode and said conductive substrate, a noise derived from the periodical signal being added to the vibration signal based on the first and second stray capacitors;

a dummy electrode disposed on said insulation film so as to induce a third stray capacitor of a third capacitance in said insulating film between said dummy electrode and said conductive substrate in a manner that the third capacitance is substantially equal to the second capacitance induced by the output electrode, a dummy signal being generated in said dummy

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electrode from the periodical signal received in said input electrode based on the first and third stray capacitors; and

a noise reducer which reduces the noise of in the vibration signal by using the dummy signal of said dummy electrode.

2. (Original) The semiconductor device as claimed in claim 1, wherein a top surface of said semiconductor substrate has a rectangular shape, and said input electrode and said output electrode are arranged at locations corresponding to different sides of said rectangular shape, respectively.

3. (Previously Presented) The semiconductor device as claimed in claim 41, wherein said shield wire is grounded at said circuit substrate.

4. (Previously Presented) The semiconductor device as claimed in claim 41, wherein said shield wire is arranged adjacent to either of said input electrode or said output electrode.

5. (Cancelled)

6. (Previously Presented) The semiconductor device as claimed in claim 1, wherein said movable portion is movable in a second direction perpendicular to said first direction, said semiconductor device further comprising angular velocity detection means for detecting vibration of said movable portion in said second direction to determine an angular velocity around an axis perpendicular to said first direction and second direction to generate said detection signal.